Complete Summary

GUIDELINE TITLE

Oral hygiene care for functionally dependent and cognitively impaired older adults.

BIBLIOGRAPHIC SOURCE(S)

Research Dissemination Core. Oral hygiene care for functionally dependent and cognitively impaired older adults. Iowa City (IA): University of Iowa Gerontological Nursing Interventions Research Center; 2002 Nov. 48 p. [50 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Oral problems and plaque-related oral diseases

GUIDELINE CATEGORY

Evaluation
Management
Prevention

CLINICAL SPECIALTY

Dentistry
Geriatrics
Nursing

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel

Dentists
Health Care Providers
Nurses
Physicians

GUIDELINE OBJECTIVE(S)

To provide practical information to assist nursing directed best-practice, long-term care staff, and caregivers with the provision and documentation of oral hygiene care for functionally dependent and cognitively impaired older adults, in order to prevent plaque-related oral diseases

TARGET POPULATION

Older adults who are functionally dependent and cognitively impaired

INTERVENTIONS AND PRACTICES CONSIDERED

1. Identification of risk factors that increase oral health problems
2. Baseline oral health assessment
3. Current oral health assessment
4. Development of an oral hygiene plan
5. Implementation of oral health care practices for preventing oral diseases and general hygiene care strategies
6. Strategies for:
    - Behavior/communication/dementia problems
    - Dentures and denture-related oral lesions
    - Natural teeth
    - Dry mouth, hypersalivation and swallowing problems
    - Palliative oral hygiene care

MAJOR OUTCOMES CONSIDERED

Risk for plaque-related oral diseases

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The search sought to identify both studies and publications in English language published between the years 1980 and 2002. The search used a two-step approach, involving an initial search of electronic databases using combinations of key words. This was supplemented with a secondary search of the references cited in the identified studies. All 433 articles identified were assessed on the

basis of abstract (or title if abstract not available) by two reviewers. Wherever possible, the full article was retrieved to decide upon the final articles appropriate for inclusion. In addition, search results were also included from a 1997 Medline search and ensuing secondary search of the references cited in the identified studies conducted by Dr Jane Chalmers for the development of a reference list of 61 articles for the Alzheimers Association of South Australia.

Electronic database searches: CINAHL, PSYCINFO, MEDLINE,
All databases were searched and limited to English and 1980-September 2002
Using keyword combinations of: oral health, oral hygiene, dental, caries, nursing home, long term care, dementia, Alzheimers, nurses, nurses aides, carer, plaque, and aspiration pneumonia.

NUMBER OF SOURCE DOCUMENTS

More than 433

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not stated

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Reviewed by series editor Marita G. Titler, PhD, RN, FAAN and expert reviewers Ronald Ettinger, BDS, MDS, DDSc, Professor, Department of Prosthodontics, Dows Institute for Dental Research, University of Iowa, Iowa City, Iowa; Catherine Watkins, DDS, MS, Associate Professor, Department of Preventive & Community Dentistry, University of Iowa College of Dentistry, Iowa City, Iowa

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Description of the Practice

The proposed intervention for the assistance and provision of oral hygiene care is composed of several parts including:

1. Identification of Factors That Increase Risk for Oral Problems
2. Baseline Oral Health Assessment (see Appendix A.1 in the guideline document)
3. Assessment of Current Oral Hygiene Care (see Appendix A.2 in the guideline document)
4. Development of Oral Hygiene Care Plan (see Appendix A.4 in the guideline document)
5. Description of Oral Hygiene Practices for Preventing Oral Diseases: General Oral Hygiene Care Strategies
    - Behavior/communication/dementia problems
    - Dentures and denture-related oral lesions
    - Natural teeth
    - Dry mouth, hypersalivation and swallowing problems
    - Palliative oral hygiene care

Factors That Increase Risk for Oral Problems

Non-oral-related factors to consider:

1. When identifying those older patients at greatest risk for plaque-related dental diseases, an assessment of the level of cognitive impairment must be made. This can be accomplished by using various cognitive assessment tools. Examples of some commonly used, research-based tools include: the Mini-Mental Status Examination (MMSE), (Folstein, Folstein, & McHugh, 1975)the Global Deterioration Scale (GDS) (Reisberg et al., 1982) and a clock-drawing examination (Sunderland et al., 1989).

    In the presence of cognitive impairment and/or behavior difficulties in an older person, specific communication techniques for use during oral hygiene care are recommended (see Appendix A.3 in the guideline document).

2. Likewise, older patients who are functionally impaired can be assessed for level of dependency upon others through examination of Instrumental Activities of Daily Living (IADL) and Activities of Daily Living (ADL).
3. The patient´s location of residence can also influence the level of risk for oral diseases. For example, because institutionalized elderly generally have more severe impairments and are generally dependent upon others for their care, they are at very high risk for oral diseases. Additionally, patients who reside in facilities with high resident to staff ratios or high staff turnover may also have poor oral health. When oral hygiene care in a facility is a low priority, or nursing personnel have not received adequate instruction in oral hygiene care, dependent residents are not likely to receive daily preventive care.

   Although community-dwelling elderly with impairments outnumber those in the institutionalized setting, it has been suggested their social support systems enable them to obtain assistance if needed. It is difficult to assess the risk of homebound elderly because research methods are compromised when accessing this population. However, recent research is indicating that oral diseases are commencing at high levels in high risk older adults whilst living in the community, and that they then enter long-term care with compromised oral health (Chalmers, 2002; Chalmers et al., 2002). Although at any one point in time only a small percentage of the older population lives in long-term care, older adults´ probability of future use of long-term care is high. In dental terms, that means that at any one point in time, the older population will have a range of oral disease risk and experience - various subgroups of high risk older adults will be experiencing high levels of oral diseases--but the probability is high that the majority of older adults will be in a high risk group and experience severe oral diseases at some time in the future.

4. Medications and radiation used for the treatment of systemic diseases can also influence risk for oral problems due to various side effects. Some medications can cause adverse oral effects such as salivary gland hypofunction (SGH), xerostomia, gingival overgrowth, lichenoid reactions, tardive dyskinesia (oral musculature movements) and problems with speech, swallowing and taste. All are oral conditions that can compromise the effectiveness of daily plaque control and oral comfort. Consultation with and between both medical and dental professionals is indicated for older patients using multiple medications and head and neck irradiation for the treatment of systemic diseases.

Oral-related factors to consider:

1. Other risk indicators include mouth-related conditions and behaviors/attitudes that can predispose the patient to oral problems. If an older person has had previous oral disease experience, then s/he is more susceptible to oral problems when self-care is compromised. For example, a patient who had active periodontal disease or caries in the past will be at an increased risk for these diseases again if daily plaque control is compromised (usually due to functional and cognitive impairments). The integrity of restorations (fillings) can become threatened when not kept clean and recurrent caries (decay) can develop.

2. As mentioned previously, the presence of xerostomia (subjective complaint of dry mouth) and/or salivary gland hypofunction (SGH) (reduced saliva flow) are major contributors to risk for oral diseases/problems. Not only can this oral side effect be the result of medications and treatment of systemic diseases, but the use of lemon-glycerine mouth swabs has an adverse effect upon the oral cavity. These swabs were commonly used in practice for the treatment of dry oral mucosal tissue--usually for palliative care. Ironically, research has revealed that these swabs further reduce the moisture available in the mouth and exacerbate the dry condition already being treated.

   Saliva has a profound influence on an older adult´s risk status for developing dental caries. Low levels of saliva result in the oral environment becoming more acidic, and together with decreased buffering capacity, result in dental caries. Symptoms that indicate a problem is present with saliva include: difficulties with eating, swallowing, or speaking; changes in taste; burning and/or painful oral tissues; a swollen and red tongue; and poor retention of dentures. Many of the medications commonly taken by older adults can effect saliva and result in the older adult perceiving that they have a dry mouth (xerostomia) and/or lowered saliva production from the salivary glands (SGH). Medications such as antipsychotics, antidepressants, tranquillizers, sedatives, diuretics, antihypertensives, anti-Parkinsonian agents, narcotic analgesics, anticonvulsants, antihistamines, and antiemetics have some of the most severe dry mouth and SGH side effects. (Refer to Appendix B in the guideline document for a summary of Oral Adverse Effects and Dental Treatment Issues with Medications.) Fluid balance problems, stress, smoking, and caffeine also are related to decreased salivary flow. Medical conditions, such as Sjogren´s syndrome and other autoimmune diseases, can also directly cause dry mouth and/or SGH. Older adults with Alzheimer´s disease may also have a reduced flow of saliva, as have those who have had irradiation to the head and neck area.

   The frequent use of water, and water-based mouthrinses can provide relief from dry mouth, either rinsed or sprayed onto the tongue and oral tissues. Crushed ice may also provide some relief. Alcohol containing mouthrinses and toothpastes with added detergents and flavors should not be used as they may burn and irritate the dry oral tissues. Topical preparations to replace the saliva are also very helpful as they lubricate and rehydrate the dry oral tissues. Pharmacists can make up these preparations, or they are commercially available as sprays, gels, or tablets (e.g., Oral Balance Gel [Laclede, USA]; Optimoist or Xerolube [Colgate Oral Pharm]; Moi-Stir [Kingswood Labs]; Salix SST tablets [Scandinavian Pure and Naturals]). The use of vaseline or similar lubricants regularly on the lips can be helpful. Detergent-free and flavor-free toothpastes are also available (e.g., Biotene toothpaste [Laclede, USA] and Floran HA toothpaste). Stimulation of saliva can be produced by the use of sugar-free chewing gum. Older adults should not be encouraged to suck on sugar-containing lozenges, mints or candies, as this will increase their risk of developing dental caries. In severe cases of dry mouth and SGH, salivary stimulants such as Pilocarpine can be prescribed, in consultation with a dental or medical practitioner.

3. Some older adults experience an apparent increase in their saliva flow, which can be very difficult to manage. Swallowing problems and problems with

innervation of oral musculature can result in the accumulation of saliva in the mouth, and are a cause of this saliva pooling and dribbling/drooling occurring. Thus, older adults with neurological conditions such as Parkinson´s disease can have saliva pooling and dribbling/drooling. Medications can be prescribed in consultation with a medical practitioner to try and reduce saliva flow. However, this is not routinely recommended because of the many other side-effects of such medications. Dental professionals can construct specific oral appliances that can be worn to assist with excessive saliva. Unfortunately these are usually unable to be worn by older adults with swallowing problems and problems with innervation of their oral musculature. Prompting of the older adult to swallow as much as is possible, maintaining as upright a position as is possible, concentrating on keeping the mouth closed and flexing the head forward when swallowing, may be helpful.

4. Patients who perceive the need for regular professional care, seek dental treatment, and are financially able to afford regular dental care are less likely to experience debilitating oral diseases than are episodic dental care seekers. These patients generally have regular preventive care and are able to avoid extensive types of restorations and/or experience less oral disease. However, once a patient becomes too cognitively impaired to initiate and maintain such behaviors independently, they become at an increased risk for developing oral diseases and conditions.

Oral Health Assessment

Numerous tools exist that can assess various aspects of oral conditions/health. Less plentiful are those which are user-friendly for non-dental personnel and are research-based. Most instruments require information be collected/accompanied by self-report of the older person. However, with cognitively impaired elderly, these types of tools are not appropriate and would be difficult to modify without compromising validity of the instrument.

U.S. Federal regulations mandate comprehensive assessments of each patient´s needs and the development of a care plan to ensure a minimal level of care in long-term care facilities receiving reimbursement through Medicare and Medicaid. The tools used to execute this process include the Minimum Data Set (MDS) and Resident Assessment Protocol (RAP). Each enables the staff to systematically assess each condition (including oral conditions) and determine the need for consultation and referral. The sections of the MDS pertaining to the oral and dental status are minimal and may tend to overlook the health of oral tissues and the presence of xerostomia. Although this tool is used nationwide, the law and regulations do not provide consistent directions or training in how to conduct the oral assessments using the MDS. Please review individual state variation that may occur with these regulations. Possibly, the implementation of in-service training could enhance the accuracy and validity of such assessments. A national task force is reviewing this tool, and users of the tool are advised to regularly update the regulations in their state.

The Brief Oral Health Status Examination (BOHSE) has been tested on cognitively impaired and unimpaired elderly. Further, it has been modified and utilized on a population of cognitively impaired elderly and found to be useful when used by Certified Nurses´ Assistants (CNAs) and nurses for oral assessments. Unlike the MDS, the BOHSE contains a â ˜measurement´ column

that provides the examiner with a description of how to assess the item directly on the form rather than requiring the examiner to obtain direction from a separate section in a book.

The BOHSE is an instrument used for screening purposes only. It is not a diagnostic tool and does not replace the need for a periodic examination by a professional dentist. Prior to using the BOHSE, staff should receive in-service education from a professional dentist or dental hygienist, School of Dentistry faculty, dentists in private practice or dentists contracted to provide services to a nursing home.

The Oral Health Assessment tool (see Appendix A.1 in the guideline document) is a modification of the BOHSE. This can be completed prior to implementing an individualized oral hygiene care plan in order to reduce the patient´s risk for plaque-related oral diseases. Completing this assessment will help the health care professional assess the patient´s current oral status and factors which can contribute to his/her risk for oral disease, thus making it possible to implement the most appropriate care plan for his/her needs.

Assessment of Current Oral Hygiene Care

An assessment of the patient´s current oral hygiene care is necessary in order to identify what s/he is currently doing for daily oral care (see Appendix A.2 in the guideline document). By identifying the patient´s self care ability, the provider can determine what level of care is necessary—whether it is just reminding, assisting, providing or palliative in nature. Information about oral hygiene care aids (types of brushes and oral care products) and frequency of use is useful when attempting to appropriately develop an oral care plan. This Assessment of Oral Hygiene Care tool can be used periodically throughout the implementation of the protocol to assist with monitoring the patient´s oral hygiene regimen.

Development of Oral Hygiene Care Plan

An individualized Oral Hygiene Care Plan (see Appendix A.4 in the guideline document) will enable the provider to focus on appropriate care for the patient. A plan should be developed and routinely updated, as a patient´s cognitive or functional impairments, oral status or self-care abilities may change.

The Oral Hygiene Care Plan includes pertinent information about the patient´s oral status; level of assistance needed with oral hygiene care; as well as the type of care necessary. Problems encountered with the patient are also noted, in order to assist the provider with identifying strategies to employ when providing care.

Description of Oral Hygiene Practices for Preventing Oral Diseases: General Oral Hygiene Care Strategies

There are five sections included in the oral hygiene care strategies:

1. Behavior/Communication/Dementia Problems
2. Dentures and Denture-Related Oral Lesions
3. Natural Teeth

4. Dry Mouth, Hypersalivation, and Swallowing Problems
5. Palliative Oral Hygiene Care

NOTE: some useful contact details for oral hygiene care products are:
Laclede (Biotene products); 800-922-5856; www.laclede.com
Specialized Care Co; 800-722-7375; www.specializedcare.com
Colgate Oral Pharmaceuticals; 800-225-3756; www.colgateprofessional.com
Kingswood Labs; 800-968-7772

A video and booklet are available with visual examples of many of the strategies described in the following sections--please see reference Chalmers et al., 2002 for purchasing details.

1. Behavior/Communication/Dementia Problems

Problem: Patient won´t open their mouth

Strategy:

- Assess ways to get oral hygiene care completed.
- Break peri-oral muscle-spasms and gain access to the mouth.
- Keep the mouth open during oral hygiene care.

Action Required:

- Use a backward-bent toothbrush to break the muscle spasms.
- Use another toothbrush or mouth-prop (e.g., Open-Wide Plus) to keep the mouth open.
- Enlist the assistance of another caregiver.
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- Try oral hygiene care at another time of day when patient is more cooperative or in a different environment that is more suitable.
- List successful strategies in the patient´s oral hygiene care plan.

Problem: Dentures can´t be taken out or put in patient´s mouth

Strategy:

- Assess ways to get oral hygiene care completed.
- Assess if there is any aggressive behavior involved.
- Assess if there is any sign of tardive dyskinesia or other movement disorder.
- Discuss with other caregivers who look after the patient to see if they are more successful at denture care for this patient and see what they do.

Action Required:

- Enlist the assistance of another caregiver.
- Consult with medical and dental professionals concerning tardive dyskinesia or other movement disorder.
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- Try oral hygiene care at another time of day when patient is less aggressive or in a different environment that is more suitable.
- See if the other carers are more successful at denture care for this patient and observe what they do.
- List successful strategies in the patient´s oral hygiene care plan.

Problem: Patient refuses oral hygiene care

Strategy:

- Assess ways to get oral hygiene care completed.
- Assess the cause for the refusal of oral hygiene care--environmental, pain, fear.

Action Required:

- Enlist the assistance of another caregiver.
- Use task-breakdown to break all the steps of the oral hygiene care task down into small steps.
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- Try oral hygiene care at another time of day when patient is more cooperative or in a different environment that is more suitable.
- List successful strategies in the patient´s oral hygiene care plan.

Problem: Patient bites toothbrush/caregiver

Strategy:

- Assess ways to get oral hygiene care completed.
- Assess if the biting is of an aggressive origin or is a consequence of tardive dyskinesia or other movement disorder

Action Required:

- Enlist the assistance of another caregiver.
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- Have several toothbrushes on hand during oral hygiene care and let the patient chew on one brush while the caregiver cleans with another.
- Use a mouth-prop to keep the mouth open (e.g., Open-Wide Plus).
- Consult with medical and dental professionals concerning tardive dyskinesia or other movement disorder.
- List successful strategies in the patient´s oral hygiene care plan.

Problem: Patient kicks or hits out

Strategy:

- Assess ways to get oral hygiene care completed.
- Assess the cause of the aggression

Action Required:

- Attempt oral hygiene care at a time when the patient is more cooperative.
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- Enlist the assistance of another caregiver.
- List successful strategies in the patient´s oral hygiene care plan.

Problem: Patient does not understand caregivers directions about oral hygiene care

Strategy: Assess ways to get oral hygiene care completed

Action Required:

- Enlist the assistance of another caregiver.
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- List successful strategies in the patient´s oral hygiene care plan.

Problem: Patient cannot rinse and/or spit and swallows all liquids/toothpastes

Strategy:

- Assess ways to get oral hygiene care completed.
- Assess the patient´s abilities for rinsing/spitting/swallowing etc.
- Assess the need for the use of toothpastes versus mouth rinses.

Action Required:

- Try some of the strategies listed in section 4. "Dry Mouth, Hypersalivation and Swallowing Problems" (below) and list successful strategies in the patient´s oral hygiene care plan.
- Enlist the assistance of another caregiver.
- Use a suction toothbrush

Problem: Patient uses offensive language

Strategy:

- Assess the cause of the offensive language.
- Assess the feasibility of completing oral hygiene care at that time.
- Assess ways to get oral hygiene care completed.

Action Required:

- Ignore the offensive language and attempt oral hygiene care if no other signs of aggression.
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- Enlist the assistance of another caregiver.
- Try oral hygiene care at another time of day when patient is less aggressive or in a different environment that is more suitable.
- List successful strategies in the patient´s oral hygiene care plan.

Problem: Patient is aggressive

Strategy:

- Assess the cause of the aggression.
- Assess ways to get oral hygiene care completed.

Action Required:

- Try oral hygiene care at another time of day when patient is less aggressive or in a different environment that is more suitable.
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- Enlist the assistance of another caregiver.
- List successful strategies in the patient´s oral hygiene care plan.

Problem: Patient is tired/sleepy

Strategy: Assess ways to get oral hygiene care completed.

Action Required:

- Try oral hygiene care at another time of day when patient is more alert.
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- List successful strategies in the patient´s oral hygiene care plan.

Problem: Patient´s head faces down toward chest

Strategy: Assess ways to get oral hygiene care completed.

Action Required:

- Enlist the assistance of another caregiver.
- Do oral hygiene care as best as is possible from different positions.
- Investigate the success of the use of different dental products such as, toothbrushing, mouthrinses, spray bottles, suction toothbrushes etc.
- Use other techniques such as, rescuing, distraction, etc (see Appendix A.3 in the guideline document).

- List successful strategies in the patient´s oral hygiene care plan.

Problem: Patient´s head moves around constantly

Strategy: Assess ways to get oral hygiene care completed

Action Required:

- Enlist the assistance of another caregiver.
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- Do oral hygiene care as best as is possible from different positions.
- Investigate the success of the use of different dental products such as toothbrushing, mouthrinses, spray bottles etc.
- If required, discuss holding the patient´s head gently during oral hygiene care with them and other parties involved.
- List successful strategies in the patient´s oral hygiene care plan.

Problem: Patient forgets to do oral hygiene care

Strategy: Assess the best way to remind the patient to do oral hygiene care

Action Required:

- Use task-breakdown to break all the steps of the oral hygiene care task down into small steps (see Appendix A.3 in the guideline document).
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- Write reminder notes for the patient if helpful.
- Ensure that the need for reminding about oral hygiene care is listed in the patient´s oral hygiene care plan.

Problem: Patient can do some oral hygiene but not all of the task

Strategy: Assess the patient´s abilities to do their oral hygiene care and if they need reminding or assistance during the different stages of the task

Action Required:

- Use task-breakdown to break all the steps of the oral hygiene care task down into small steps (see Appendix A.3 in the guideline document).
- Use other techniques such as rescuing, distraction, etc (see Appendix A.3 in the guideline document).
- Write reminder notes for the patient if helpful.
- Ensure that the parts of the oral hygiene care task that the patient can do themselves are listed in their oral hygiene care plan.

2. Dentures and Denture-Related Oral Lesions

Problem: Dentures require cleaning

Strategy: Physical cleaning is essential to ensure dentures are clean

Action Required:

- Physical cleaning of dentures at least once daily, or more frequently in a bowl or sink filled with water (or a washcloth placed in the bottom of the sink). Clean with soap and a hard nailbrush or denture brush.
- Chemical denture cleaner tablets or pastes can be used in addition to cleaning with soap and water.

Problem: Dentures are dirty and covered in calculus (tartar)

Strategy: Regular removal of calculus, debris and staining is essential

Action Required:

- Dentures may be soaked at night or during the day in a solution of diluted white wine vinegar and cold water (50:50).
- Dentures may need professional and chemical cleaning by a dental professional.

Problem: Denture storage container is dirty

Strategy: Regular sterilization of denture storage containers is required

Action Required: Weekly, or more frequently, physical cleaning of the denture storage container and then soaking in a solution of diluted sodium hypochlorite (bleach) for 1 hour. Clean with soap and water before using.

Problem: Dentures are not named

Strategy: All partial and full dentures should be named.

Action Required:

- Permanent naming of dentures can be done by a dental professional by inserting the name into the denture.
- Temporary naming of dentures can be done by caregivers--very lightly sand the pink acrylic denture surface on the cheek side (not the fitting side), write on initials or name with a permanent marker or dark pencil, cover with several layers of clear nail varnish and allow to thoroughly dry. Temporary commercial kits are available from medical/dental suppliers.

Problem: Denture stomatitis--the soft tissue under where the denture sits is red/inflamed/painful/ bleeding

Strategy: Regular cleaning/sterilization of dentures.

Action Required:

- Physical cleaning of dentures at least once daily, or more frequently. Removal of dentures at night whenever possible.
- Treatment must be done in consultation with a dental professional--dentures may require sterilization in diluted sodium hypochlorite (bleach), and an antifungal medication may need to be prescribed and placed inside the denture´s fitting surface.

Problem: Angular cheilitis--the corners of the mouth are red/weeping/painful

Strategy:

- Treatment of fungal infection, if present.
- Lubricating and protection of corners of mouth.
- Attention to any denture-related problems.

Action Required: Treatment must be done in consultation with a dental professional--antifungal cream may need to be prescribed and applied to the corners of the mouth. Apply vaseline to corners of mouth several times daily to protect the skin. Dentures may require treatment, especially if recurring angular cheilitis persists.

Problem: An ulcer is present under the denture

Strategy: Removal of cause of irritation to allow the soft tissue to heal.

Action Required:

- Whenever possible, remove denture until ulcer is healed. Warm salt and water mouth rinses/spray bottle/saturated gauze can be applied several times daily to ulcer.
- Use of numbing gels/ointments must be carefully monitored and is not generally advised.

3. Natural Teeth

Recent research has identified that casein phosphopeptides derived from bovine milk have an anti-cariogenic effect on natural teeth by providing a calcium reservoir in the saliva. Commercial preparations are available in some countries, and hold great promise to decrease caries risk and treat decay. However, their general use in older adults has not been advocated (Walsh, 2000).

Problem: Broken teeth present, roots of teeth present and/or brown areas and dark staining are evident on the white tooth crowns or on the exposed roots of the teeth

Strategy:

- Assessment of cause of broken teeth, retained tooth roots, and/or dark staining and brown areas by a dental professional.
- Assessment of caries risk status.

Action Required:

- Organization of a dental professional to assess the broken teeth, retained roots, and/or dark staining and brown areas.
- Consultation with medical professionals concerning medications causing xerostomia (dry mouth) and staining (iron-based medications).
- Treatment as prescribed by the dental professional, which could include extraction or restoration of teeth/roots, cleaning and/or scaling.
- Dental professional may require caregiver to incorporate specific preventive practices into oral care:
- use of antimicrobial (chlorhexidine gluconate) gel or mouthrinse (in spray bottles) for a short period (e.g., use only for 3 weeks out of every 4 weeks).
- use of fluoride products such as sodium fluoride gel or mouthrinse (in a spray bottle) monitored by a dental professional.
- do not use chlorhexidine and fluorides together as fluorides can interfere with the action of chlorhexidine--allow at least 2 hours between their use.
- use of extra-strength fluoride toothpaste monitored by a dental professional.
- monitoring and reduction of frequency of dietary sugar intake.
- use of products to help dry mouth (see Section 5. "Palliative Oral Hygiene Care" below).

<u>Problem: Patient is complaining of pain with their teeth, or their behavior indicates a possible dental problem (e.g., not eating, pulling at face or mouth, excessive grinding of teeth, biting on hand or object)</u>

Strategy:

- Caregiver to briefly assess possible dental causes of pain.
- Urgent assessment by a dental professional to determine any acute or chronic oral causes of pain.
- Assessment of caries and periodontal disease risk status.

Action Required:

- Caregiver can do a brief oral assessment. Organization of a dental professional to assess the pain and any dental problems in a timely fashion.
- Assist dental professional with history of the pain/behavior and other relevant medical and social history.
- Assist dental professional at the dental examination.

<u>Problem: Large accumulations of food, plaque and calculus (tartar) around the teeth and/or bleeding gums (gingiva)</u>

Strategy:

- Assessment of periodontal condition by a dental professional.
- Assessment of periodontal disease risk status.
- Assessment of the patient´s oral hygiene abilities and needs.
- Carer uses adjunctive chemical and physical oral hygiene strategies.

Action Required:

- Organization of a dental professional to assess the periodontal condition.
- Treatment as prescribed by the dental professional, which may include cleaning and scaling.
- Dental professional may require caregiver to incorporate specific preventive practices into regular oral hygiene care:
    - use of antimicrobial (chlorhexidine gluconate) gel or mouthrinse (in spray bottles) (e.g., use only for 3 weeks out of every 4 weeks).
    - use of modified dental equipment (e.g., bicycle handle on toothbrush, triple-head toothbrush (Superbrush®), backward-bent toothbrush, electric toothbrush or oral irrigator.
    - increased assistance with and/or supervision of oral hygiene care, including the use of task breakdown strategies (see Section 1, "Behavior/Communication/Dementia Problems").
    - use of products to help dry mouth (see Section 5, "Palliative Oral Hygiene Care" below).

<u>Problem: Bad breath (halitosis)</u>

Strategy:

- Assessment of periodontal condition by a dental professional, and possible cleaning.
- Assessment of gastrointestinal problems by a medical professional.
- Assessment of the patient´s oral hygiene abilities and needs.
- Caregiver uses adjunctive chemical and physical oral hygiene strategies

Action Required:

- Organization of a dental professional to assess the halitosis.
- Dental professional may require caregiver to incorporate specific preventive practices into regular oral hygiene care:
    - use of antimicrobial (chlorhexidine gluconate) gel or mouthrinse (in spray bottles) for a short period (e.g., use only for 3 weeks out of every 4 weeks).

<u>Problem: Tongue is black or darkly coated</u>

Strategy:

- Assessment of tongue by a dental professional, and possible cleaning of tongue.

- Caregiver uses adjunctive chemical and physical oral hygiene strategies

Action Required:

- Organization of a dental professional to assess the tongue.
- Dental professional may require caregiver to incorporate specific preventive practices into regular oral hygiene care:
    - physical cleaning of the tongue with a toothbrush or tongue-cleaning kit.
    - prescription of medications.

Problem: Grinding of teeth and/or dentures

Strategy:

- Assessment of tooth-grinding by a dental professional.
- Assessment of risk factors for tooth-grinding.

Action Required:

- Organization of a dental professional to assess the tooth grinding.
- Investigation by medical and dental professionals into possible causes of tooth grinding:
    - tardive dyskinesia (caused by neuroleptic medications) and adverse movement effects of other medications.
    - occlusion of natural teeth and dentures.
    - tempero-mandibular dysfunction.

4. Dry Mouth, Hypersalivation, and Swallowing Problems

Problem: Patient cannot swallow well and chokes on liquids and foods, and may be fed via a parenteral tube into the stomach (PEG)

Strategy:

- Assessment of swallowing problems, drooling, and oral hygiene care needs.
- Evaluation of current levels of plaque accumulation and aspiration risks.
- Assessment of dental products and dental aids to help with oral hygiene care.
- Improvement of caregiver´s knowledge of increased risks for aspiration pneumonia with the accumulation of plaque for 7+ days.

Action Required:

- Consultation with speech therapist and dental professionals about swallowing problem and oral hygiene care needs.
- Use of modified oral hygiene care techniques (e.g., suction toothbrush, swabbing mouth with gauze soaked in chlorhexidine, toothbrushing without toothpaste, use of backward-bent toothbrush to break muscle

spasms, use of chlorhexidine and fluoride mouthrinses in small spray bottles).
- Use of two or more staff to do oral hygiene care.
- Use of suction to regularly remove excessive drooling, and use of suction during oral hygiene care.
- Regular review of oral hygiene care needs and aspiration risks.

Problem: Patient´s mouth is dry--food can´t be chewed well, tongue is swollen and red, oral tissues are dry and red, speech is affected, and/or burning/painful oral tissues

Strategy:

- Assessment of dry mouth.
- Assessment of medications.
- Use of saliva substitutes or stimulants.
- Change of diet.
- Increase of fluids.
- Elimination of alcohol containing dental products.

Action Required:

- Assessment of dry mouth and medications in consultation with medical and dental professionals.
- If required, a softer diet with increased fluids may be recommended.
- Use of saliva substitutes, such as Oral Balance in the Biotene® range.
- Use of toothpastes and mouthrinses without alcohol or excessive additives, such as the Biotene® range.
- Use of water or mouthrinses in spray bottles.
- Chewing of sugar-free gum to stimulate saliva.
- Prescription use of pilocarpine drops to stimulate saliva after consultation with medical and dental professional.

Problem: Patient has excessive saliva and is drooling

Strategy:

- Assessment of any swallowing problems and levels of drooling.
- Use of medications to decrease saliva flow.
- Use of oral appliances.

Action Required:

- Referral for an assessment of any swallowing problems.
- Discussion of the possible use of medications or oral appliances to decrease saliva flow with medical and dental professionals.
- Use of suction to remove excessive drooling.
- Use of protective clothing for drooling.

5. Palliative Oral Hygiene Care

When patients are in the final stages of an illness or are undergoing complex medical treatment, their mouths can become very dry and painful from the medical treatments and associated medications being used (e.g., chemotherapy, radiation, immunosuppression, behavior and pain control).

- If the oral tissues of the tongue, cheeks, gums, and lips are very swollen, inflamed, red, painful and/or ulcerated they can easily tear, a combination of mouthrinses can be comforting and be rinsed or sprayed into the mouth with a small atomizer or spray bottle:
    - ½ teaspoon salt and ½ teaspoon baking soda in 8oz of water
    - Chlorhexidine gluconate gel or mouthrinse to stop superinfection and help with plaque control
    - DO NOT use hydrogen peroxide, thymol or other harsh mouthrinses as they can burn and further damage the oral tissues, and generally DO NOT use topical analgesic gels, and DO NOT use lemon and glycerine swabs as they will further dry the oral tissues
- Any excessive nasal and oral secretions can be removed using a tongue depressor wrapped with gauze that has been soaked in chlorhexidine gluconate.
- To lubricate and protect the oral tissues, KY lubricating Jelly can be rubbed all over the tongue, cheeks etc and vaseline or Lansinoh (Lanolin) rubbed on the lips.
- Dentures may need to be removed and not worn.
- Use products that can reduce oral dryness, such as those from the Biotene range.
- Changes in taste can occur and should be discussed with a dentist and doctor--they can be treated with Zinc Sulfate 220mg twice daily with meals.
- There are several bacterial and viral infections that patients may develop. These need appropriate medications prescribed by a doctor or dentist.
- There are several types of fungal (candidal) infections that may develop in older persons:
    - denture stomatitis under dentures--see section 2 (Dentures and denture-related oral lesions)
    - angular cheilitis at mouth corners--see section 2 (same as above)
    - acute "thrush"--white coating on mouth, tongue and/or throat
        - "azole" drugs such as miconazole gel can be used but check with doctors or dentists as they can interact with other medications such as warfarin and have some side effects
        - "nystatin" drops have been used a lot in the past, but these do not stay in the mouth for long. If used, they need to be applied by mixing the drops with fruit juice or KY lubricating Jelly--nystatin troches can also be sucked

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Oral problems experienced by the elderly are usually preventable and not the direct result of aging. Plaque-related oral diseases, although generally not life threatening or seriously impairing for most elderly, can have an effect upon the management of medical conditions, general health, nutrition and quality of life.
- Good oral hygiene can minimize a major source of pathogens, especially those that are blood borne. Older persons with poor dental plaque control are susceptible to bacteremia (the entry of bacteria into the systemic bloodstream) and similar bacteria can be found in the clots that predispose an individual to stroke. Additionally, bacteria found in the oral cavity can be aspirated into the lungs of an older person, which presents a risk for aspiration pneumonia.
- Regular assessment of the oral cavity is critical for the prevention of other systemic problems that can lead to more serious outcomes. For example, assessing the ability to chew and swallow adequately can assist with identifying ways to improve nutritional intake. The early detection of oral problems can also prevent the development of oral pain, which can lead to behavioral problems in cognitively impaired elderly who are unable to verbally communicate discomfort and may 'act out' instead.
- Maintaining natural teeth and the gingival tissues (gums) in a healthy state can prevent the need for an emergency or complex dental procedure. In severe cases of periodontal disease, teeth can loosen and be accidentally inhaled or swallowed. When periodontal disease (gum disease) or caries (decay) is extensive or an abscess exists, there becomes a need to extract the diseased teeth. Often times, in order to manage a behaviorally difficult older person, the use of sedation or general anesthesia is warranted for fillings and/or tooth extractions, which can be detrimental for a cognitively impaired elderly person.
- Untreated problems can cause pain and discomfort that may interfere with eating and swallowing, which may result in an inadequate nutritional intake. Also, these problems can have an effect upon well-being, self-esteem and quality of life. To ensure maintenance of quality of life, older persons should be able to:
    - stay pain free
    - eat and talk comfortably
    - feel happy with their appearance
    - maintain social interaction and self-esteem

- stay as healthy as possible
- maintain self-esteem and habits/standards of health care they have had throughout their life.

Subgroups Most Likely to Benefit:

The following are examples of groups of older individuals who are at increased risk for oral diseases:

- have cognitively impaired and/or other neurological conditions
- the functionally dependent
- have xerostomia/salivary gland hypofunction
- have a high experience of tooth decay
- have behavioral problems during oral hygiene care
- have swallowing problems
- the immunocompromised
- diabetics

Individuals who experience these problems are at an increased risk for plaque-related oral diseases related to their inability to perform adequate self-care and their medical, mental, physical and/or psychosocial conditions. The regular removal, or disruption, of plaque is compromised when individuals are not able to cognitively recognize the need for care and/or physically cannot perform the oral care task.

Cognitively impaired elderly are at high risk for dental diseases since they often forget or may be unable to continue oral hygiene. They may also resist assistance from staff or have difficulty perceiving and reporting pain or discomfort, which indicates a problem exists.

Oral diseases are often present when combined with the use of many medications (polypharmacy), declining health, and disabilities. Older persons who are taking medications, or a combination of medications, which can cause xerostomia, are at an increased risk for plaque-related diseases. In the presence of xerostomia, the oral bacteria can thrive and are not buffered by the saliva adequately. As a result, the bacterial dental plaque is more virulent and the rate of tooth decay increases as the oral environment becomes more acidic.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- This evidence-based practice protocol is a general guideline. Patient care continues to require individualization based on patient needs and requests.
- Use of the oral assessment tool and learning oral hygiene care techniques is best accomplished when accompanied by hands-on training provided by a dental hygienist or dentist.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Evaluation of Process Indicators and Outcome Indicators

Evaluation of the use of the guideline protocol among patients at risk for oral problems, both process and outcome factors should be evaluated.

Process Indicators

Process indicators are those interpersonal and environmental factors that can facilitate the use of a protocol.

One process factor that can be assessed with a sample of nurses/& physicians is knowledge about oral health. The Oral Health Knowledge Assessment Test (see Appendix C in the guideline document) should be assessed before and following the education of staff regarding use of this protocol.

The same sample of nurses/& physicians for whom the Knowledge Assessment test was given should also be given the Process Evaluation Monitor (see Appendix D in the guideline document) approximately one month following his/her use of the protocol. The purpose of this monitor is to determine his/her understanding of the protocol and to assess the support for carrying out the protocol.

Outcome Indicators

Documentation of the implemented Oral Hygiene Care for Functionally Dependent and Cognitively Impaired Older Adults Protocol is necessary in order to determine its success with each patient. Use of the Oral Health Assessment (See Appendix A.1 in the guideline document) and Assessment of Current Oral Hygiene Care (see Appendix A.2 in the guideline document) tools may be adapted in order to continually audit individual patient´s oral hygiene care. Please adapt these tools to fit your unit and develop additional outcomes that may be appropriate for the individual patient.

The Oral Hygiene Outcomes Monitor (see Appendix E in the guideline document) is to be used for monitoring and evaluating the usefulness of the Oral Hygiene Care for Functionally Dependent and Cognitively Impaired Older Adults protocol in improving outcomes of elderly patients with cognitive and physical impairments and require assistance with their daily oral care. Please adapt this outcome monitor to your organization or unit and add outcomes you believe are important.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Research Dissemination Core. Oral hygiene care for functionally dependent and cognitively impaired older adults. Iowa City (IA): University of Iowa Gerontological Nursing Interventions Research Center; 2002 Nov. 48 p. [50 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available from the University of Iowa Gerontological Nursing Interventions Research Center, Research Dissemination Core, 4118 Westlawn, Iowa City, IA 52242. For more information, please see the University of Iowa Gerontological Nursing Interventions Research Center Web site.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on June 12, 2003. The information was verified by the guideline developer on July 18, 2003.

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